



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,221	04/01/2004	Nicholas Francis Martin	839-1532	5398
30024	7590	07/05/2005		EXAMINER
NIXON & VANDERHYE P.C. 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				VERDIER, CHRISTOPHER M
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/814,221	MARTIN ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Christopher Verdier	3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-10 is/are allowed.
- 6) Claim(s) 16-20 is/are rejected.
- 7) Claim(s) 11-15 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 01 April 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>6-24-04</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

***Drawings***

Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

The disclosure is objected to because of the following informalities: Appropriate correction is required.

In paragraph 6, line 1, -- a -- should be inserted after “provided”.

In paragraph 6, line 7, -- , -- should be inserted after “surfaces”.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claims 3, 12, and 17, which recite that the groove has substantially parallel sides and a substantially flat base, have no antecedent basis in the specification for the underlined term “substantially”.

Art Unit: 3745

Claims 4, 13, and 18, which recite that the groove has a constant depth, have no antecedent basis in the specification.

Claims 5 and 14, which recite that the groove has a constant width, have no antecedent basis in the specification.

Claims 6 and 19, which recite that the groove has a constant depth and width, have no antecedent basis in the specification.

#### ***Examiner's Suggestions to Claim Language***

The following are suggestions to improve the clarity and precision of the claims:

In claim 6, line 2, -- a constant -- may be inserted after "and".

In claim 19, line 2, -- a constant -- may be inserted after "and".

#### ***Claim Objections***

Claims 11-15 are objected to because of the following informality: Appropriate correction is required.

In claim 11, line 6, -- , -- should be inserted after "surfaces".

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Scalzo 5,022,818 (figure 5). Note the compressor stator blade comprising an airfoil portion 67 and a base portion 68, 70, the base portion having a substantially solid rectangular shape, and a groove 72 cut across a width dimension of the base portion, the groove having dimensions selected to obtain a predetermined natural frequency for the airfoil portion, with the groove having substantially parallel sides and a substantially flat base, and the groove having a constant depth and a constant width. The base portion is substantially rectangular, with an unnumbered pair of relatively longer side surfaces, a pair of relatively shorter end surfaces 20, an unnumbered radially inner surface, and an unnumbered radially outer surface, the groove extending completely across a width dimensions of the base portion from one longer side surface to the other longer side surface. Note that the term "predetermined" means to "establish in advance" (The American Heritage Dictionary, Second College Edition, 1982; see attached copy of definition). Because the groove has dimensions, these dimensions are selected to obtain an "established in advance" natural frequency for the airfoil portion, because when the groove is formed, it establishes in advance the natural frequency for the airfoil portion.

Claims 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Cordier 5,429,479 (figure 4B and the top of figure 1). Note the compressor stator blade comprising an airfoil portion 3 and a base portion 9B, the base portion having a substantially solid rectangular shape, and a groove 15 cut across a width dimension of the base portion, the groove having dimensions selected to obtain a predetermined natural frequency for the airfoil portion, with the groove having substantially parallel sides and a substantially flat base, and the groove having a

constant depth and a constant width. Note that element 3 is broadly considered to be an airfoil, because it is a stator vane located in the compressor section of a turbo engine, which guides inlet air through the turbo engine. Note that the term “predetermined” means to “establish in advance” (The American Heritage Dictionary, Second College Edition, 1982; see attached copy of definition). Because the groove has dimensions, these dimensions are selected to obtain an “established in advance” natural frequency for the airfoil portion, because when the groove is formed, it establishes in advance the natural frequency for the airfoil portion.

Claims 16 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bobo 3,326,523. Note the compressor stator blade comprising an airfoil portion 21 and a base portion 46, the base portion having a substantially solid rectangular shape, and a groove 65 cut across a width dimension of the base portion, the groove having dimensions selected to obtain a predetermined natural frequency for the airfoil portion, with the groove having a constant depth and a constant width (note that the depth and width are constant because they do not vary in the circumferential direction of the base). The base portion is substantially rectangular, with an unnumbered pair of relatively longer side surfaces, a pair of unnumbered relatively shorter end surfaces, an unnumbered radially inner surface, and a radially outer surface 58, the groove extending completely across a width dimensions of the base portion from one longer side surface to the other longer side surface (see figure 3). Note that element 21 is broadly considered to be an airfoil, because it is a stator vane located in the compressor section of a gas turbine engine, which guides inlet air through the turbo engine. Note that the term “predetermined” means to “establish in advance” (The American Heritage Dictionary, Second College Edition, 1982; see

Art Unit: 3745

attached copy of definition). Because the groove has dimensions, these dimensions are selected to obtain an “established in advance” natural frequency for the airfoil portion, because when the groove is formed, it establishes in advance the natural frequency for the airfoil portion.

Claims 16-17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Heurteux 4,014,627. Note the compressor stator blade comprising an airfoil portion 16 and a base portion 17, the base portion having a substantially solid rectangular shape, and a groove 18 cut across a width dimension of the base portion, the groove having dimensions selected to obtain a predetermined natural frequency for the airfoil portion, with the groove having substantially parallel sides and a substantially flat base. The base portion is substantially rectangular, with an unnumbered pair of relatively longer side surfaces, a pair of relatively shorter end surfaces 20, an unnumbered radially inner surface, and an unnumbered radially outer surface, the groove extending completely across a width dimensions of the base portion from one longer side surface to the other longer side surface (see figure 4). Note that element 16 is broadly considered to be an airfoil, because it is a stator vane located in a compressor section, and functions to guide inlet air through the compressor. Note that element 18 is considered to have a “substantially” flat base, because as seen in figure 2 and column 2, lines 18-21, the base of the curve is only “slightly curved”. Note also MPEP 2173.05(b), which states that “substantially” is a broad term, citing *In re Nehrenberg*, 280 F.2d 161, 126 USPQ 383 (CCPA 1960). Note that the term “predetermined” means to “establish in advance” (The American Heritage Dictionary, Second College Edition, 1982; see attached copy of definition). Because the groove has dimensions, these dimensions are selected to obtain an “established in advance”

Art Unit: 3745

natural frequency for the airfoil portion, because when the groove is formed, it establishes in advance the natural frequency for the airfoil portion.

***Allowable Subject Matter***

Claims 1-10 are allowed.

Claims 11-15 contain allowable subject matter; Applicant should correct the informality in claim 11.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.  
June 24, 2005

  
Christopher Verdier  
Primary Examiner  
Art Unit 3745